

# Nathan McCarty

DEVOPS SPECIALIST

456 Park Ave, Lexington, KY, 40502, USA

✉ nathan@mccarty.io | 🏠 www.mccarty.io | 📧 nmccarty | 📧 thatonelutenist | 📷 nathan-mccarty

## Skills

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|--------------------------|--|
| <b>DevOps</b>            | AWS, GCE, Azure, Docker, OpenStack, Kubernetes, Terraform, Anisble               |
| <b>Programming</b>       | Python, C/C++, C#, Java, Rust, Haskell, Go, OCaml, F#                            |
| <b>Operating Systems</b> | Linux (RHEL/CentOS, Debian, Ubuntu), Windows Server (2016, 2019), macOS, FreeBSD |
| <b>Storage/Databases</b> | Ceph, Minio, ZFS, MySQL, PostgreSQL, MS-SQL, memcached, Redis, MongoDB           |

## Experience

### VetData

Lexington, KY

OPERATIONS SPECIALIST

Aug. 2019 - Current

- Manage, deploy, and support client endpoints for proprietary data extraction pipeline.
- Diagnose and correct technical issues with client endpoints and larger data pipeline.
- Perform research and analysis on client data to identify and correct issues.
- Manage and support Microsoft Azure compute and MS-SQL database instances.
- Participate in DevOps pipeline by identifying and correcting software bugs.
- Maintain relations with and provide support to our strategic business partners.

### Commonwealth Office of Technology (Kentucky)

Frankfort, KY

SERVICE ANALYST II/CONTRACTOR

Mar. 2019 - Aug. 2019

- Managed and provided support for a deployment of over 20,000 Windows 7 and Windows 10 endpoints across the various agencies constituting the state government of Kentucky.
- Utilized SCCM and Active Directory to remotely diagnose and correct issues with client endpoints.
- Oversaw operating system and software update deployments.
- Provided support and troubleshooting for Xerox and Fujitsu printers and scanners.
- Identified and diagnosed issues with network links and site-to-site VPNs.
- Performed System Administration and Identity Management tasks.
- Diagnosed issue with and provided support for the petascale network storage system.
- Provided support for IBM Z series systems and applications.
- Assisted in state wide migration to Office365.
- Created and maintained process documentation.

### University of Kentucky ITS

Lexington, KY

ITS TECHNICAL SUPPORT TECHNICIAN

Mar. 2018 - Mar. 2019

- Provided tier two and three technical support for the faculty, students, and staff of the university.
- Performed System Administration tasks on Windows and Linux Systems.
- Identified and diagnosed network issues.
- Assisted in roll out of new campus-wide wifi system.
- Created and maintained process documentation in ServiceNow knowledge base.
- Maintained HIPAA compliance as well as other security standards.

### Self Employed

Lexington, KY

INDEPENDENT CONTRACTING

Aug. 2017 - Mar. 2019

- Provided in home technical support. Provided desktop support to local small businesses. Refurbished Lenovo, HP, and Dell laptops for resale

### University of Kentucky Research Computing

Lexington, KY

DATA SCIENTIST/STUDENT INTERN

Jan. 2017 - Aug. 2017

- Maintained and administered high performance systems used by the university research community.
- Maintained multiple virtualization and containerization environments, including Hyper-V, VMWare ESX-i/vSphere, and Docker with Kubernetes.
- Utilized Anisble to automate and maintain large scale system deployments.
- Setup and maintained a multi-datacenter petascale Ceph based object storage system.
- Developed a prototype system for serializing, persisting, and migrating snapshots of running computations via low level Docker API functionality.
- Maintained and utilized a large scale OpenStack deployment.
- Migrated department website from Drupal to Wordpress.

## University of Kentucky ITS

ITS TECHNICAL SUPPORT TECHNICIAN

Lexington, KY

Dec. 2014 - Jan. 2017

- Provided tier two technical support for the faculty, students, and staff of the university.
- Performed Systems Administration and Identity Management Tasks.
- Maintained and administered the UK Software Download Site.
- Migrated the Download site from Windows/Apache to Ubuntu/NGINX, maintained the associated MySQL database, containerized the application and introduced high availability with HAProxy.
- Utilized Ansible to automate system deployments and rolling updates.
- Performed email administration tasks on Microsoft Exchange Server
- Assisted in campus wide migration to Office365
- Created and maintained process documentation.

## Projects & Achievements

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### Asuran

HTTPS://ASURAN.RS

May. 2019 - Current

- Open source, high performance, secure deduplicating archiver written in Rust.
- Built on modern research, such as FastCDC, into content defined chunking and deduplication, as well as the tokio async runtime.
- Utilizes a blockchain/merkle tree structure to verify repository integrity and provide a high level of tamper resistance.

### UK RC Object Storage System

UNIVERSITY OF KENTUCKY RESEARCH COMPUTING

Jan. 2017 - Aug. 2017

- Used ansible to deploy Ceph across 2 geographically separated data centers totaling more than 40 individual servers and more than 1PB of available storage.

### Container Canner

UNIVERSITY OF KENTUCKY RESEARCH COMPUTING

Jan. 2017 - Aug. 2017

- Experimental prototype system to serialize the state and filesystem of a running docker container to a single file.
- Utilized docker's existing snapshotting features as well as other low level API functionality to piece together a somewhat portable archive, that could later be used to resume the previously running task at a later date and on a different machine.

### UK Software Download Site

HTTPS://DOWNLOAD.UKY.EDU

2014 - 2019

- Provides students, faculty, and staff access to software licensed by the university.
- Provided low downtime guarantees through rolling updates and HAProxy load balancing.
- Supported a large user base, consisting of a combined total of 40,000 students, staff, and faculty.

### Hackathon Wins

VARIOUS

2015 - 2018

- Best Hack for College Students, CatHacks 2018
- Second Place, Hack The Hill 2017
- Best Hardware Hack, CatHacks 2017

## Certifications

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### TripleByte

TRIPLEBYTE CERTIFIED GENERALIST SOFTWARE ENGINEER

Mar. 2020

## Education

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### University of Kentucky

SOME COLLEGE

Lexington, KY

Aug. 2015 - May 2018

- Dual major in computer science and psychology.
- Completed 72 credit hours (3 years) but did not graduate.